

SEQUENCE LISTING

<110> JOUNG, KEITH J.
PABO, CARL

<120> CONTEXT SENSITIVE PARALLEL OPTIMIZATION OF ZINC FINGER
DNA BINDING DOMAINS

<130> 51588.62031 US

<140> 10/532,258

<141> 2005-04-21

<150> PCT/US03/034010

<151> 2003-10-23

<150> 60/420,485

<151> 2002-10-23

<150> 60/466,889

<151> 2003-04-30

<160> 53

<170> PatentIn Ver. 3.3

<210> 1

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

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<221> MOD_RES

<222> (2)..(5)

<223> Variable amino acid and this region may encompass
2 to 4 residues

<220>

<221> MOD_RES

<222> (7)..(18)

<223> Variable amino acid

<220>

<221> MOD_RES

<222> (20)..(24)

<223> Variable amino acid and this region may encompass
3 to 5 residues

<400> 1

Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His

<210> 2
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 2
Asp Arg Ser Ser Leu Thr Arg
1 5

<210> 3
<211> 7
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<213> Artificial Sequence

<220>
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peptide

<400> 3
Gln Gly Gly Asn Leu Val Arg
1 5

<210> 4
<211> 7
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<213> Artificial Sequence

<220>
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peptide

<400> 4
Gln Ala Ala Thr Leu Gln Arg
1 5

<210> 5
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oligonucleotide

<400> 5
gcc

<210> 6
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6
gaa

3

<210> 7
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<220>
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oligonucleotide

<400> 7
gca

3

<210> 8
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<220>
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peptide

<400> 8
Asp Arg Ser Ser Thr Arg Gln Gly Gly Asn Val Arg Gln Ala Ala Thr
1 5 10 15

Gln Arg

<210> 9
<211> 9
<212> DNA
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<220>
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oligonucleotide

<400> 9
gcagaagcc

9

<210> 10
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<220>
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peptide

<400> 10
Arg Lys Asp Ser Val Arg Gln Ser Gly Asp Arg Arg Asp Cys Arg Asp
1 5 10 15

Ala Arg

<210> 11
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oligonucleotide

<400> 11
gccgcagtg

9

<210> 12
<211> 18
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peptide

<400> 12
Ala Ser Ala Asp Thr Arg Asn Arg Ser Asp Ser Arg Thr Ser Ser Asn
1 5 10 15

Lys Lys

<210> 13
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<220>
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oligonucleotide

<400> 13

gatgctgca

9

<210> 14
<211> 25
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<213> Artificial Sequence

<220>
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oligonucleotide

<400> 14
ttttcgacac gcagaagccc attac

25

<210> 15
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oligonucleotide

<400> 15
ttttcgacaa gccgcagtgg attac

25

<210> 16
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oligonucleotide

<400> 16
ttttcgacac gatgctgcat attac

25

<210> 17
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oligonucleotide

<400> 17
ttttgacggt gcgtgggcgg ttcac

25

<210> 18
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<212> PRT
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peptide

<400> 18
Asp Ser Pro Thr Arg Arg Gln Gly Ala Asn Arg Arg Gln Ala Asn Thr
1 5 10 15

Gln Arg

<210> 19
<211> 18
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peptide

<400> 19
Asp Ser Pro Thr Arg Arg Gln Asn Thr Asn Thr Arg Gln Ala Asn Thr
1 5 10 15

Gln Arg

<210> 20
<211> 18
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<220>
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peptide

<400> 20
Asp Ser Pro Thr Arg Arg Gln Asn Thr Asn Thr Arg Gln Ala Asn Thr
1 5 10 15

Gln Arg

<210> 21
<211> 18
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<220>
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peptide

<400> 21

Asp Glu Ser Thr Arg Arg Gln Gly Pro Asn Arg Arg Gln Arg Asn Thr
1 5 10 15

Gln Arg

<210> 22

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<213> Artificial Sequence

<220>

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peptide

<400> 22

Asp Ser Pro Thr Arg Arg Gln Gly Pro Asn Arg Arg Gln Gly Asn Thr
1 5 10 15

Thr Arg

<210> 23

<211> 18

<212> PRT

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peptide

<400> 23

Asp Ser Pro Thr Arg Arg Gln Asn Pro Asn Val Arg Gln Arg Asn Thr
1 5 10 15

Gln Arg

<210> 24

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 24

Asp Ser Pro Thr Arg Arg Gln Arg Thr Asn Ile Arg Gln Arg Asn Thr
1 5 10 15

Gln Arg

<210> 25
<211> 18
<212> PRT
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<220>
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peptide

<400> 25
Asp Arg Pro Thr Arg Arg Gln Gly Ala Asn Arg Arg Gln Ala Asn Thr
1 5 10 15

Gln Arg

<210> 26
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 26
Asp Ser Pro Thr Arg Arg Gln Asn Thr Asn Asn Arg Gln Ala Asn Thr
1 5 10 15

Gln Arg

<210> 27
<211> 18
<212> PRT
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<220>
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peptide

<400> 27
Asp Ser Pro Thr Arg Arg Gln Lys Pro Asn Asp Arg Gln Gly Asn Ser
1 5 10 15

Ile Arg

<210> 28
<211> 18
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 28

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Pro | Thr | Arg | Arg | Gln | Ser | Thr | Asn | Asn | Arg | Gln | Gly | Asn | Ser |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |

Asn Arg

<210> 29

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 29

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Pro | Thr | Arg | Arg | Gln | Asn | Val | Asn | Thr | Arg | Gln | Arg | Asn | Thr |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |

Gln Arg

<210> 30

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 30

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gln | Asp | Ile | Val | Lys | Gln | Ser | Ser | Thr | Thr | Arg | Glu | Lys | Gln | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

His Arg

<210> 31

<211> 18

<212> PRT

<213> Artificial Sequence

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<400> 31
Arg Ser Asp Val Ala Asn Gln Ser Ser Thr Thr Arg Glu Arg Gln Gly
1 5 10 15

Lys Arg

<210> 32
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 32
Arg Ser Asp Val Ala Asn Gln Ser Ser Thr Thr Arg Glu Arg Gln Gly
1 5 10 15

Lys Arg

<210> 33
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 33
Arg Ser Asp Leu Arg Lys Gln Ser Ser Thr Thr Arg Glu Arg Gln Gly
1 5 10 15

Lys Arg

<210> 34
<211> 18
<212> PRT
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<220>
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peptide

<400> 34
Arg Pro Asp Val Asp Lys Gln Ser Ser Thr Thr Arg Asp Ser Thr Thr
1 5 10 15

Arg Arg

<210> 35
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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<400> 35
Arg Ser Asp Val Ala Asn Gln Ser Ser Thr Thr Arg Glu Lys Gln Gly
1 5 10 15

Gly Arg

<210> 36
<211> 18
<212> PRT
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<220>
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<400> 36
Arg Ser Asp Leu Thr Lys Gln Ser Gly Thr Lys Arg Glu Arg Gln Gly
1 5 10 15

Lys Arg

<210> 37
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 37
Arg Ser Asp Leu Thr Lys Gln Ser Ser Thr Thr Arg Glu Lys Gln Gly
1 5 10 15

Arg Arg

<210> 38
<211> 18
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 38

Arg Ser Asp Val Ser Lys Gln Ser Thr Thr Lys Arg Glu Arg Gln Gly
1 5 10 15

Lys Arg

<210> 39

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 39

Arg Gln Asp Ile Val Lys Gln Ser Ser Thr Thr Arg Glu Lys Gln Gly
1 5 10 15

His Arg

<210> 40

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 40

Arg Ser Asp Leu Thr Lys Gln Ser Ser Thr Thr Arg Glu Arg Gln Gly
1 5 10 15

Lys Arg

<210> 41

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 41

Arg Pro Asp Val Gln Lys Gln Ser Gly Thr Val Arg Asp Gln Ser Asn
1 5 10 15

Arg Arg

<210> 42
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 42
Leu Arg Ala Asp Asp Asn Leu Ser Gln Thr Lys Arg Ile Arg Gly Asn
1 5 10 15

Val Arg

<210> 43
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 43
Ala Lys Ala Asp Asp Arg Leu Ser Gln Thr Lys Arg Val Lys Ser Asn
1 5 10 15

Arg Arg

<210> 44
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 44
Leu Arg Ala Asp Asp Arg Leu Ser Gln Thr Lys Arg Ile Gly Ser Asn
1 5 10 15

Arg Arg

<210> 45
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 45
Leu Arg Ala Asp Asp Arg Leu Ser Gln Thr Lys Arg Val Lys Ser Asn
1 5 10 15

Arg Arg

<210> 46
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 46
Leu Arg Thr Asp Asp Arg Leu Ser Gln Thr Gln Arg Leu Asn Ser Asn
1 5 10 15

Ala Arg

<210> 47
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 47
Leu Arg Thr Asp Asp Arg Leu Ser Gln Thr Arg Arg Leu Arg Ser Asn
1 5 10 15

Gly Arg

<210> 48
<211> 18
<212> PRT
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<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 48

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Ala | Asp | Asp | Arg | Leu | Ser | Gln | Thr | Lys | Arg | Met | Arg | Ser | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

Met Arg

<210> 49

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 49

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Ala | Asp | Asp | Arg | Leu | Arg | Gln | Thr | Lys | Arg | Leu | Arg | Ala | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

Leu Arg

<210> 50

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 50

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Ala | Asp | Asp | Arg | Leu | Ala | Gln | Thr | Lys | Arg | Ile | Gly | Ser | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

Thr Arg

<210> 51

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 51

Leu Arg Thr Asp Asp Arg Leu Ser Gln Thr Asn Arg Leu Gln Gly Asn

1 5 10 15
Lys Arg

<210> 52
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 52
Leu Arg Ala Asp Asp Arg Leu Arg Gln Thr Lys Arg Leu Arg Ala Asn
1 5 10 15

Leu Arg

<210> 53
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 53
Asn Asn Ala Met Val Arg Leu Ser Gln Thr Gln Arg Met Gln Gly Asn
1 5 10 15

Ser Arg